

Abstract

In an internal combustion engine provided with a variable valve mechanism that varies at least a valve operating characteristic (valve lift amount and the like) of an intake valve, a target intake air amount equivalent to a target torque is set based on operating conditions of the engine, to calculate a target volume flow ratio by dividing the target intake air amount by an engine rotation speed and total cylinder volume. The target volume flow ratio is corrected according to closing timing of the intake valve. If the valve lift amount of the intake valve is in a low valve lift region, the target volume flow ratio is further corrected according to the valve lift amount, and the post corrected target volume flow ratio is converted into a valve opening area of the intake valve to be set as a target valve opening area. Then, based on the target valve opening area, a target valve operating characteristic of the intake valve is set. Thereafter, the variable valve mechanism is controlled so that the valve operating characteristic of the intake valve reaches the target valve operating characteristic.